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ABSTRACT

A comprehensive understanding of stage fright will better enable teachers and researchers to select the most appropriate "cure" and to determine those cases in which speech training will help reduce stage fright or other states of communication apprehension. Attempts to understand stage fright have focused on three psychological theories of emotion (neurological, body reaction, and a two-factor theory of body reaction and environmental cues), but each theory has proved inadequate. A more comprehensive theory depicts stage fright as the result of the interaction of three principal components: the behavioral, the physiological, and the cognitive. The behavioral factor includes avoiding speech situations and taking actions to control or repress tensions. The physiological factor refers to arousal symptoms such as increased sweating and breathing rate. The cognitive factor is the consciousness of the behavioral or physiological changes. Both the behavioral and the physiological factors must be present for a speaker to experience stage fright, and the greater the physiological changes the greater the behavioral changes. Further research into the emotional nature of stage fright must be dependent on all three factors, recognize stage fright as only one phase of communication apprehension, and examine how different audience and situation cues affect the intensity of stage fright. (HTH)

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TOWARD AN UNDERSTANDING OF THE EMOTIONAL NATURE OF STAGE FRIGHT: A THREE FACTOR THEORY

Dudley D. Cahn

Some researchers and practitioners in speech communication are concerned with "communication anxiety," a general proneness to experience apprehension across communication situations.[1] Others with a similar interest focus on the public speaking situation. They study "speech anxiety," a negative effect of a speaker's apprehension toward public speaking events.[2] Finally, other scholars make a shift in perspective and study "stage fright," a particular instance of adverse emotional arousal which may or may not result from a more general proneness.[3] They have the advantage of studying stage fright without positing a personality trait or a general proneness to experience apprehension across communication situations in general or even across public speaking situations.

The present study follows this third line of research by furthering an understanding of the emotional nature of stage fright. Its purpose is threefold: first, to demonstrate that the need to understand stage fright as an emotional experience still exists; second, to describe a three factor emotion theory that interrelates behavioral, physiological, and cognitive factors; third, to discuss the implications of three factor theory for the study of stage fright.

A Need for Understanding

The study of stage fright is one of the most important emotional states. First, the prevalence of stage fright among Americans is well documented. Speaking before groups frightens many Americans.[4] Concern for stage fright among students has been reported in journals of the speech, communication, and psychology professions. Second, while reducing stage fright is often cited as one of the goals of the basic public speaking course, few students may receive the help they need. Researchers at Pennsylvania State University and Michigan State University found that students suffering from fear of public

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speaking tend to drop the basic course.[5] Some of the fearful students who remain or are required to take a public speaking course have bad experiences. "...if they (students) get into one (speech class) it is usually a very unpleasant, anxiety-producing experience which accomplishes little at best and may make the situation worse."[6] Third, the many cures is further evidence for the importance of stage fright. Among the more than 50 methods that have been developed to deal with it outside the speech classroom are systematic desensitization, rational emotive therapy, cognitive modification, flooding, modeling, relaxation, self-monitoring, and rehearsal.[7]

An understanding of stage fright is necessary for effective treatment. At present, the "cures" for stage fright are like aspirin. They may relieve symptoms but not necessarily causes of the problem because speech researchers and teachers lack an adequate understanding of stage fright. Medical experts can determine when aspirin will help, do nothing, or aggravate a condition. Speech experts need to know when stage fright "cures" will help, do nothing, or aggravate stage fright. A comprehensive understanding of stage fright will better enable teachers and researchers to select the most appropriate "cure" and to determine those cases in which speech training will help reduce stage fright or enhance other states of communication apprehension.

While the need to understand stage fright is great, the problem is that the emotional nature of stage fright is not understood. In 1955, Clevenger claimed that while stage fright is an emotion, "...considerable doubt exists as to the exact nature of that emotion."[8] After reviewing the literature on stage fright, Clevenger and Phifer pointed out that speech teachers and textbook authors offer considerable advice on the management of stage fright while demonstrating an insufficient understanding of it.[9] They suggest that this may be why many public speaking textbooks devote more space to remedies than causes of stage fright.

By the mid-1950's it was felt that an understanding of stage fright may be possible if tied to a psychological theory of emotion. Subsequent attempts focused on three such theories, Lomas' neurological theory, James-Lange's body reaction theory, and Schachter's two factor theory. In the remainder of this section, I will briefly describe each of these and show why each offered an inadequate understanding of stage fright.

Lomas' Neurological Emotion Theory

After defining stage fright as an emotion, Clevenger relied on Lomas' neurological emotion theory to explain stage fright.[10] According to Lomas, the conscious experience of the emotions is explained primarily as an upward discharge of thalamic impulses into the cerebral cortex.[11] Lomas claimed that in the well-organized adult cortical intellectual patterns normally dominate thalamic emotional patterns. In cases of intense emotion, the thalamic impulses temporarily dominate the intellectual impulses, producing disorganized behavior. Clevenger concluded that when stage fright occurs, "the emotions intrude upon the domain of the intellect to the detriment of the speech patterns and responses."[12]

Lomas' neurological emotion theory fails to adequately explain stage fright for two reasons. First, presumably overpowered by the thalamic emotional impulses, the cortical intellect has no role. More recent emotion theory and research show that the cortical intellectual operations (cognitive operations) play an important guiding function in emotional experience.[13] Second, Lomas' analysis assigns no significance in emotional experience to the perception of environmental cues. More recent emotion theory and research show that environmental conditions provide cues (cognitions) that play an important interpretive function in emotional experience.[14] For these two reasons, Lomas' theory is too limited as an emotion theory and provides an inadequate understanding of stage fright.

James-Lange's Body Reaction Theory of Emotion

In their survey of college speech textbooks, Clevenger and Phifer included a brief history of previous attempts to relate stage fright to the James-Lange emotion theory.[15] James and Lange claimed that "body changes directly follow the perception of the exciting fact, and that our feeling of the same changes as they occur is the emotion."[16] James and Lange argued that "we feel sorry because we cry, angry because we strike, afraid because we tremble, and not that we cry, strike, or tremble, because we are sorry, angry or fearful."[17] Therefore, the behavior occurs first, followed by inference and labeling processes accompanied by feelings.

Since there are different emotions, presumably different body states are recognizable and produce different experiences. Bodily changes were induced "by a preorganized mechanism" and were seen as forming an unlimited number of unique patterns.[18] "The various permutations...make it abstractly possible that no shade of emotion...should be without a bodily reverberation as unique...as is the mental mood itself."[19] James and Lange went on to state that one is fully aware of these unique patterns. "Every one of the bodily changes...is felt...the moment it occurs."[20] Recent research, however, has shown that different emotions are physiologically similar.[21] Therefore, since the James-Lange theory equates visceral activity with diverse emotions, it is an inadequate theory of stage fright.

Schachter's Two Factor Theory of Emotion

Freimuth offered an explanation of stage fright based on Schachter's emotion theory.[22] According to Schachter, an emotion consists of two components: (1) perceived arousal which is the interoception of one's visceral activity or bodily changes; and (2) perception cognitions which are the exteroception of one's immediate environmental cues.[23] Along with these two factors, Schachter incorporated the attribution process. He argued that the emotional experience arrived at through causal attribution is the most crucial mediator between perceived arousal and perception

cognitions. He went on to describe how this takes place. First, one's perceived arousal initiates a quest for a causal accounting. Second, this epistemic search for cues ultimately provides one with an explanation of his arousal and guides his response selection.

Schachter's theory is incomplete. Since his theory begins with perceived arousal, it fails to explain why one is aroused in the first place.[24] In addition, although he frequently uses behavior to infer emotional states, Schachter's theory fails to include a behavioral component. Finally, his theory is limited to situations in which there is time after the appearance of an ambiguous arousal inducer for a cognitive search for cues to take place. This limitation may not include the appearance of stage fright in public speaking where the provoking stimulus is clear (i.e. the audience-speech situation) and the response is immediate.

A Three Factor Theory of the Emotional Nature of Stage Fright

Speech researchers agree that stage fright can be conceptualized three ways: behaviorally, physiologically, and cognitively.[25] Behaviorally they focus on overt manifestations or stage fright symptoms observed by the audience or raters. Physiologically, they measure arousal or physiological changes. Cognitively, speech researchers use speakers self-reports as subjective assessments of their own nervous behaviors and aroused physiology. In each case, researchers view the behavioral, physiological, and cognitive measures as different operational definitions of the same phenomenon known as stage fright.

Logically, if the three types of measures are valid, one would expect a high correlation among them. As it turns out there is at best only a moderate corelation.[26] How can one explain this? The answer to this question depends on how one views the behavioral, physiological, and cognitive components of stage fright. Insead of viewing them as three different manifestations of the same phenomenon, I suggest that they

be seen as interdependent mechanisms controlling different aspects of an emotional experience. Integrating Hull's drive theory[27] with Schachter's emotion theory,[28] a three factor theory depicts an emotion as the result of the interaction of three principal components: the behavioral, the physiological, and the cognitive.

1. The behavioral factor refers to a living organism's overt response to a stimulus. In Hull's drive theory, responses are unconditional (i.e., startle reactions) or acquired through learning (i.e., a typical phobias) without necessarily involving cognitive processes. Hull views the behavior associated with emotions as "an unmediated, direct response made without appreciable latency to the presentation of the emotion inducing stimulus."[29]

It seems to me that there is a way in which stage fright is learned for many individuals. Perhaps, it is more accurate to say that it may not be unlearned. Maybe at first individuals are stimulated in a negative way whenever they communicate with strangers. Over the years, they meet so many, one or two at a time, that they become habituated or accustomed to it. Confrontation with an audience, however, is rare; thus, the high school or college student feels uneasy about addressing a group of listeners. Given enough successful performances before an audience, speakers may grow accustom to public speaking, too.

Regarding stage fright, the behavioral factor includes two types. One type consists of avoiding the speech-audience situation in the first place. A fearful speaker may decline an invitation to speak or fail to show. Fearful students may avoid speech courses or withdraw after the term begins. This type of behavior has received little attention because speech researchers and teachers have focused their efforts on students who remained in the speech course. Therefore, speech researchers tend to observe another type of response, often refered to as stage fright symptoms, overt manifestations, or behavioral "speech anxiety." These responses fall into at

least three major categories. One category, referred to as "fidgetiness," includes gross movements of the skeletal muscles such as shuffling feet, swaying body, and swinging arms. A second category, called "inhibition," includes actions taken to control or repress tensions such as deadpan expression and trembling. The third category, known as "automia," includes indicators of automic imbalance such as moistening lips, blushing, breathing heavily, and frequent swallowing.[30]

2. The physiological factor refers to bodily changes, visceral activity or feelings, excitation, arousal, or a discharge of the sympathetic nervous system. For the individual the major subjective experiences are palpitation, tremor, and sometimes a feeling of flushing and accelerated breathing.

In Hull's drive theory the physiological factor is the response-energizing mechanism. Physiological arousal is also unconditional or acquired through learning without necessarily involving cognitive processes. Physiological arousal prepares the individual for "the temporary engagement in vigorous motor activities...[31]

The physiological factor regarding stage fright commonly includes these indicators of arousal: elevated heart rates, changes in blood pressure, increased sweating, and changes in skin conductance. Before and after speaking, heart rates show a marked increase while some systalic and diastolic blood pressure readings go up and others go down.[32] In an attempt to determine a pattern description, Clevenger and others measured heart rate before, during, and after a public speech.[33] Four phases were identified and labeled as anticipation, confrontation, adaptation, and release. This pattern was replicated,[34] although this replication has been criticized[35] and the authors have retorted.[36]

Palmar sweat fingerprints reveal that speakers sweat more when they believe that they are performing oral readings before a live audience.[37] The use of sequential printing techniques show that sweating is quite significant during the anticipation period (waiting to give a speech), increases even more while speaking, and finally decreases immediately after the speech to a point below the anticipation

period (waiting to give a speech), increases even more while speaking, and finally decreases immediately after the speech to a point below the anticipation stage but above the base levels.[38] Furthermore, Myers used a Galvanic Skin Response (GSR) instrument to measure skin conductance. Although it is implied that skin conductance is affected by public speaking, Myers did not describe the specific nature of the changes before, during, and after the presentations.

How does three factor theory explain the relationship between physiological and behavioral factors? Hull proposed a "generalized drive" which is nonspecific and undifferentiated. There is no one-to-one relationship between a particular state of arousal and associated behaviors. As a response energizer physiological arousal is a drive or energy that enhances any and every behavior engaged in as a function of the magnitude of the prevailing arousal. Hull argued that arousal is a state of acute excitation that energizes the performance of conditional and unconditional responses made to environmental stimuli. The intensity of behavior is proportional, then, to the level of arousal prevailing at the time.

3. The cognitive factor or experiential component is the conscious experience of the behavior or physiological changes associated with emotions. Among its many operations, perception, labeling, inference, appraisal, and attribution processes are included. For individuals awareness of physiological changes (the so-called feeling state) or behaviors initiate other cognitive operations, serving to appraise the emotion which may effect changes in subsequent behavior and/or physiological arousal. The cognitive component of emotion is "a modifier or a corrective that, within limits, controls the more archaic, basic emotion responsiveness governed by unlearned and learned S-R connections."[39]

How does three factor theory explain the relationship between the cognitive factors and the two remaining factors? Schachter argued that one labels, interprets, and identifies physiological arousal in terms of environmental cues.[40] Exerting a

steering function, cognitions derived from the immediate environment provide the framework within which an individual labels and understands feelings. The cognition determines whether the state of physiological arousal is labeled as fear, anger, or joy.

Cognitive skills such as problem solving deteriorate during intense emotional experiences. For example, when terrified, sexually aroused, or angered, one may fail to anticipate the implications of his actions. In such cases, one's thinking processes become simplistic. Most of the individual's emotional reaction is channeled into action while minimal cognitive operations (such as awareness of gross environmental cues) are maintained.[41] Evidence exists suggesting that high levels of physiological arousal greatly impair the cognitive processes involved in appraisal.[42]

Acute stage fright may result in a deterioration of cognitive skills. Since speech skills require high level cognitive operations, speech dysfluencies that typically occur during severe stage fright are signs of disturbed cognitive operations. Thus, intense stage fright may block some cognitive operations involved in speech, appraisal, and attribution. Meanwhile other cognitive operations such as those involving the perception of gross environmental cues (i.e., the presence of an audience) continue to function although probably distorted or hampered.[43]

Implications of Three Factor Theory for the Study of Stage Fright

Three factor theory suggests propositions that are amenable to research and further an understanding of the emotional nature of stage fright by describing the interactions among the three components.

1. According to three factor theory, individuals do not experience an emotion when a stimulus event evokes a specific behavior without also evoking physiological arousal. More specifically, if the speech-audience situation (as a stimulus event) evokes a specific behavior (such as avoidance of the event)

without evoking physiological arousal, speakers are unlikely to experience stage fright. In such cases, avoidance of the event is explained by the force of habit or rule (i.e., avoiding all situations where they feel that they have nothing to contribute or where they do not understand what is expected of them). Before a researcher can claim that a speaker has experienced stage fright, one must observe arousal, preferably through physiological measures. However, it is unlikely that the speech-audience situation fails to produce physiological arousal for most speakers.[44]

2. According to three factor theory, a stimulus event that evokes a specific behavior and physiological arousal may evoke an emotion. Then, as the individuals become aware of their behavior and arousal, they will appraise the situation. If they deem the behavior and arousal appropriate, they will continue the emotion as long as necessary or until fatigue sets in.

Therefore, if the speech-audience situation evokes avoidance behavior and physiological arousal, speakers may experience stage fright. Then, as they become aware of their behavior and arousal, they will appraise the situation. If they see that the response is appropriate, they will continue to experience stage fright. If they ascertain that the response is inappropriate, they may change their behavior and arousal.

3. A stimulus event that evokes physiological arousal without evoking a specific behavior initiates a quest for a causal accounting (epistemic motivation) that provides the individual with an explanation of the arousal and guides response selection.

For some people the public speaking situation may produce arousal without avoidance behavior. In this case the arousal initiates cognitive operations which determine the labeling of the experience as perhaps stage fright. The cognitive operation involved in this appraisal is expressed in attributional terms, meaning

that the speaker would come to attribute his or her arousal to the public speaking situation, resulting in stage fright as an emotional reaction.[45] The speech-audience situation contains certain features that are perceived as threatening. An important contribution to the study of stage fright could be made by researchers who discover what these specific features are.

Conclusion

A three factor emotion theory has been described along with its implications for research on stage fright. The behavior and physiological factors were presented as the response and response-energizing mechanisms, respectively, in Hull's drive theory. The cognitive factor was identified as the modifying conscious experiential component in Schachter's emotion theory. Research based on an understanding of the interaction of the three factors views stage fright from a more comprehensive perspective. In addition, this understanding suggests that stage fright be defined as a state of communication apprehension which is produced by the speech-audience situation and where the interaction of physiological, cognitive, and behavioral factors interferes with communication.

An understanding of the emotional nature of stage fright derived from three factor theory emphasizes the need for speech scholars to include all three factors in their research design. Before a researcher can claim that a speaker has experienced stage fright, one must observe avoidance behavior and arousal (preferably through physiological measures). Given avoidance behavior and arousal, presumably the intensity of the behavior will depend on the amount of arousal. For example, holding the cognitive factor constant, an increase in arousal through stimulating drugs, exercise, etc., should enhance the avoidance behavior, if attributed to the speech-audience situation and attribute their behavior and arousal to it. While many studies concern the behavioral response and physiological arousal of the

frightened speaker, the cognitive factor as characterized in three factor theory has received little attention. What cues result in the identification and emotional intensity of the stage fright situation? We need to know what audience and situation cues perceived by the speaker add to one's identification of the situation and to the intensity of the emotional experience. For example, how does the number of listeners, their familiarity with the speaker, their status, the type of speech occasion, and its formality affect the emotional experience of the speaker?

FOOTNOTES

[1]M. Hyde, "The Experience of Anxiety: A Phenomenological Investigation," Quarterly Journal of Speech, 66(1980), 140-54.

[2]A. Mulac and A. Sherman, "Behavioral Assessment of Speech Anxiety," Quarterly Journal of Speech, 60 (1974), 134-43.

[3]T. Clevenger, "A Synthesis of Experimental Research in Stage Fright," Quarterly Journal of Speech, 45 (1959), 134-45.

[4]R. H. Bruskin, Bruskin Report (1973).

[5]J. C. McCroskey, D. C. Ralph, and J. E. Barrick, "The Effect of Systematic Desensitization of Speech Anxiety," Speech Teacher, 19(1970), 32-36.

[6]J. C. McCroskey, "The Effects of Communication Apprehension on Nonverbal Behavior, "Communication Quarterly, 24 (Winter 1976), 39-44.

[7]W. Page, "Recent Research on the Treatment of Speech Anxiety," paper, International Communication Association, Chicago, 1978.

[8]T. Clevenger, "A Definition of Stage Fright," Central States Speech Journal, 7(1955), 26-30.

[9]T. Clevenger and G. Phifer, "What do Beginning College Speech Texts Say About Stage Fright?" Speech Teacher, 8(1959), 1-7.

[10]Clevenger, "a Definition..."

[11]C.W. Lomas, "The Psychology of Stage Fright," Quarterly Journal of Speech, 23(1937), 35-44.

[12]Clevenger, "A Definition..," p. 29.

[13]S. Schachter, "The Interaction of Cognitive and Physiological Determinants of Emotional State," in L. Berkowitz (ed.), Advances in Experimental Social Psychology (Vol. 1) (New York: Academic, 1964); D. Zillmann, "Attribution and Misattribution of Excitatory Reactions," in J.H. Harvey, W.J. Ickes, and R.F. Kidd (ed.), New Directions in Attribution Research (Vol. 2) (Hillsdale, N.J.: Erlbaum, 1978).

[14]Ibid.

[15]Clevenger and Phifer.

[16]W. James and C. Lange, The Emotions (Vol. 1) (Baltimore: Williams and Wilkins, 1922), p. 13.

[17]Ibid.

[18]Ibid, p. 101.

[19]Ibid.

[20]Ibid.

[21]Zillmann.

[22]V. Freimuth, "The Effects of Communication Apprehension on Communication Effectiveness," Human Communication Research, 2(1976), 287-298.

[23]Schachter

[24]Zillmann, p. 355

[25]T. Clevenger, "A Synthesis of Experimental Research..."

[26]Ibid, p. 138.

[27]C.L. Hull, Principles of Behavior (New York: Appleton, 1943); C.L. Hull, A Behavior System: An Introduction to Behavior Theory Concerning the Individual Organism (New Haven, Conn.: Yale University, 1952).

[28]Schachter.

[29]Zillmann, P. 355.

[30]T. Clevenger and T.R. King, "A Factor Analysis of the Visible Symptoms of Stage Fright," Speech Monographs, 28 (1961), 296-298.

[31]Zillmann, p. 356.

[32]M. Dickens and W. R. Parker, "An Experimental Study of Certain Physiological Introspective and Rating Scale Techniques for the Measurement of Stage Fright," Speech Monographs, 18(1951), 251-259.

[33]T. Clevenger, M. Motley, and L. Carlile, "Changes in Heart Rate During Classroom Public Speaking," Unpublished Manuscript, University of Texas, 1967.

[34]R.R. Behnke and L.W. Carlile, "Special Reports: Heart Rate as an Index of Speech Anxiety," Speech Monographs, 38 (1971), 65-69.

[35]D. T. Porter and G. P. Burns, "A Retort to the Criticism of Heart Rate as an Index of Speech Anxiety," Speech Monographs, 40 (1973), 156-159.

[36]L. W. Carlile and R.R. Behnke, "A Retort to the Criticism of Heart Rate as an Index of Speech Anxiety," Speech Monographs, 40 (1973), 160-164.

[37]D.L. Bode and E.J. Brutten, "A Palmar Sweat Investigation of the Effects of Audience Variation Upon Stage Fright," Speech Monographs, 30(1963), 92-96.

[38]L.F. Droppleman and D.M. McNair, "An Experimental Analog of Public Speaking," Journal of Consulting and Clinical Psychology, 36(1971), 91-96.

[39]Zillmann, p. 356. This cognitive component differs greatly from the cognitive dimension commonly posited in stage fright research. Traditionally speech researchers have viewed a cognitive dimension narrowly as a self-reported subjective assessment. One of the most widely used self-reports is the PRCA which is a trait measure of a more general communication apprehension (reticence). See J.C. McCroskey, "Special Reports: Measures of Communication Bound Anxiety," Speech Monographs, 37(1970), 269-277. Another widely used self-report is the PRCS or versions of it

which focuses more on the speaker's perception of his or her emotional state in the speech-audience situation. See H. Gilkinson, "Social Fears as Reported by Students in College Speech Classes," Speech Monographs, 9(1942), 141-160; H. Gilkinson, "A Questionnaire Study of the Causes of Social Fears Among College Speech Students," Speech Monographs, Fears Among College Speech Students," Speech Monographs, 10(1943), 74-93; M. Dickens, F. Gibson, and C. Prall, "An Experimental Study of the Overt Manifestations of Stage Fright," Speech Monographs, 17(1950), 37-47; G.L. Paul, Insight vs Desensitization in Psychotherapy, (Stanford, CA.: Stanford University, 1966).

Lamb argued that, in spite of Gilkinson's instructions to subjects to comment on feeling associated with the most recent speech, PRCS items still confound the state-trait distinction. Therefore, Lamb devised two separate versions enable researchers to measure Speech A-State and Speech A-Trait stage fright. See Lamb, "Speech Anxiety...,"p. 63.

[40]Schachter.

[41]Zillmann.

[42]D. Zillmann, J. Bryant, J.R. Cantor, and K.D. Day, "Irrelevance of Mitigating Circumstances in Retaliatory Behavior at High Levels of Excitation," Journal of Research in Personality, 9(1975), 282-293.

[43]While Lomas claimed that in cases of intense emotion, the thalamic impulses temporarily dominate the intellectual impulses, producing disorganized behavior, a return to Lomas' neurological emotion theory is not advocated. Lomas fails to assign a role to the cortical intellect, while the three factor theory acknowledges that the cognitive factor has at least a limited role in intense emotional experience. Furthermore, Lomas assigned no significance to the perception of environmental cues while the three factor theory suggests that perception plays an important interpretive function in acute emotions.

[44]Dickens and Parker.

[45]This line of reasoning may suggest a form of misattribution therapy whereby an adversive emotional state like stage fright can be minimized by leading speakers to attribute their arousal to a nonveridical source (hence, a misattribution). Research has not supported this line of reasoning, however. Speakers serving as subjects failed to misattribute their arousal more to "noise bombardment" than to the speech-audience situation. See K.J. Singerman, T.D. Borkovec, and R.S. Behavior, "Behavior Therapy, 7(1976), 306-313. Thus, misattribution therapy may have limited if any applicability to the control of stage fright. Exactly why speakers are less susceptible to attribution errors regarding stage fright is unclear. Perhaps further research will show why this is the case or lend support to misattribution therapy.